Module 11 Review

**Translate the expression with rational exponents into a radical expression and simplify, if possible.**

1. $y^{\frac{5}{15}}$
2. $\left(\frac{64}{125}\right)^{\frac{2}{3}}$
3. $\left(16\right)^{2.5}$

**Translate the radical expression into an expression with rational exponents and simplify, if possible.**

1. $\sqrt{y^{7}}$
2. $ \sqrt[4]{\left(8z\right)^{2}}^{}$

**For 6–9, simplify the expression. Assume that all variables are positive. All exponents should be positive in simplified form. Rationalize any irrational denominators.**

1. $\left(\frac{125}{125^{\frac{1}{3}}}\right)^{\frac{1}{2}}$
2. $\frac{\sqrt{x^{3}y^{5}}}{x^{\frac{1}{2}}y^{\frac{3}{2}}}$
3. $\sqrt{2}∙\sqrt[3]{16}$
4. $\sqrt[4]{32x^{12}y^{9}z^{4}}$

10-14 solve each equation. Identify any extraneous roots.

 10. $\sqrt{x+15}=x-5$

11. $\left(x+6\right)^{\frac{1}{2}}-7=-2$

 12. $\sqrt[3]{4x-4}=-2$

 13. $\sqrt{10x}=3\sqrt{x+1}$

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 15. $\sqrt[3]{x-5}=x+1$

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